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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/970,474	10/03/2001	Bernard O. Geaghan	57120US002	1153
32692	7590	07/05/2005	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			KE, PENG	
			ART UNIT	PAPER NUMBER
			2174	

DATE MAILED: 07/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/970,474	GEAGHAN ET AL.	
	Examiner	Art Unit	
	Peng Ke	2174	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-38 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8, 10-23, 24-27, 29-36, and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by Kent U.S. Patent 6,723,929.

As per claim 1, Kent teaches a method for distinguishing between two or more temporally overlapping touch inputs in a touch screen system comprising:

- (a) measuring signals caused by the two or more touch inputs; (columns 42, lines 64-column 43 lines 14)
- (b) measuring positional data for the touch inputs; (columns 42, lines 64-column 43 lines 14)

(c) determining whether any of the signals exceeds a minimum threshold for a single touch input; (column 43, lines 13-32)

(d) determining whether any of the signals exceeds a maximum it threshold for a single touch input; (column 43, lines 13-32)and

(e) calculating and reporting to the touch screen system a touch location using positional data that corresponds to any of the signals that exceeds the minimum threshold but that does not exceed the maximum threshold. (column 43, lines 32-55)

As per claim 2, Kent teaches the method of claim 1, further comprising the step of subtracting the positional data used in step (e) from positional data corresponding to any of the signals that exceeds the maximum threshold to calculate a touch location unreported by step (e). (column 43 lines 60-column 44, lines 64)

As per claim 3, Kent teaches the method of claim 1, further composing determining which portions of the total signal correspond to touch-down, hold, and lift-off events of the two or more overlapping touch inputs. (column 43, lines 13-32)

As per claim 4, Kent teaches the method of claim 1, further comprising the step of calculating and reporting a touch location when two sequential performances of steps (a) through (e) both result in no touch location being reported due to the signals exceeding the maximum threshold. (column 45, lines 13-24)0

As per claim 5, Kent teaches the method of claim 1, wherein at least one of the minimum and maximum thresholds are determined from a calibration step. (figure 24 (b) items 2405 and 2406)

As per claim 6, Kent teaches the method of claim 1, wherein the minimum and maximum thresholds comprise preset values. (column 34, line 30-48)

As per claim 7, Kent teaches the method of claim 1, wherein at least one of the minimum and maximum thresholds are updated during normal use of the touch screen system. (column 34, line 30-48)

As per claim 8, Kent teaches the method of claim 1, wherein at least one of the minimum and maximum thresholds are updated based on user touches within a designated region. (column 34, line 30-48)

As per claim 10, Kent teaches the method of claim 1, wherein the total signal is a total electrical current measurement. (column 8, lines 52-65)

As per claim 11, Kent teaches the method of claim 1, wherein the touch screen system comprises a capacitive touch screen. (column 14, lines 34-50)

As per claim 12, Kent teaches the method of claim 1, wherein the touch screen system comprises a resistive touch screen. (column 14, lines 34-50)

As per claim 13, Kent teaches the method of claim 1, wherein the touch screen system comprises a force-based touch screen. (column 14, lines 34-50)

As per claim 14, Kent teaches the method of claim 1, wherein a touch location is reported in step(e) only if the touch location calculated in step (e) is contained within an area of the touch screen designated as a valid touch area. (column 43, lines 34-46)

As per claim 15, Kent teaches a touch screen system comprising:
a touch panel for measuring touch-based user input signals; (column 8, lines 52-65)
an information display disposed for viewing through the touch panel; and a processing unit for discriminating the touch-based user input signals to determine which signals correspond to temporally overlapping individual touch by comparing a signal magnitude to one or more predetermined threshold values and by performing one or more of monitoring a signal magnitude rate of change, monitoring a rate of change of calculated touch position, monitoring proximity of touch position to one or more designated active areas, or monitoring proximity of touch position to one or more designated 10 regions of higher double touch probability. (column 43, lines 32-column 44, lines 23)

As per claim 16, it is rejected with the same rationale as claim 11. Supra.

As per claim 17, it is rejected with the same rationale as claim 12. Supra.

As per claim 18, it is rejected with the same rationale as claim 13. Supra.

As per claim 19, Kent teaches the touch system of claim 15, wherein the touch panel is a surface acoustic wave touch panel. (Abstract)

As per claim 20, Kent teaches the touch system of claim 15, wherein the touch system is part of a game system that allows at least two players to use the touch panel. (column 14, lines 10-24)

As per claim 21, Kent teaches a method for distinguishing temporally overlapping touch inputs in a touch screen system comprising:

repeatedly measuring a signal caused by one or more touch inputs; (column 14, lines 34-50)

monitoring rates of change of the signal; (column 43, lines 13-32)

correlating the rates of change of the signal with touch-down, hold, and lift-off events, to determine a sequence of said events; (column 43, lines 13-32) using the determined sequence of said events to determine a temporal ordering of the one or more touches; (column 14, lines 34-50)

calculating a touch location of at least one of the one or more touches given the determined sequence; (columns 42, lines 64-column 43 lines 14) and reporting the touch location. (column 14, lines 34-50)

As per claim 22, it is rejected with the same rationale as claim 15. Supra.

As per claim 24, Kent teaches the method of claim 21, wherein the step of reporting said touch location is not performed for a calculated touch location if said touch location has moved

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more than a predetermined distance from a preceding calculated touch location. (column 43, lines 13-32)

As per claim 25, Kent teaches the method of claim 21, further comprising the step of comparing a magnitude of the signal to a minimum threshold value and a maximum threshold value so that the reporting step is only performed for touch locations that correspond to signals whose magnitude exceeds the minimum threshold but does not exceed the maximum threshold. (column 43, lines 13-32)

As per claim 26, Kent teaches a method for distinguishing valid touch inputs among temporally overlapping touch inputs in a touch screen system comprising: measuring a predetermined number of touch signals, each measurement taken at a predetermined time interval, each time interval being shorter than an expected touch input hold duration; (column 43, lines 13-32)

calculating a signal parameter for each of the sisals; (column 43, lines 13-32)

calculating a touch location for each of the sisals that is within a predetermined range; and reporting a touch position to the touch screen system for airy of the calculated touch locations that is less than a predetermined distance away from any of the other calculated touch locations. (column 43, lines 13-32)

As per claim 27, it is of the same scope as claim 15. Supra.

As per claim 29, it is rejected with the same rationale as claim 26. Supra.

As per claim 30, it is rejected with the same rationale as claim 1. Supra.

As per claim 31, it is of the same scope as claim 8. Supra.

As per claim 32, it is of the same scope as claim 15. Supra.

As per claim 33, it is rejected with the same rationale as claim 26. Supra.

As per claim 34, Kent teaches the method of claim 33, wherein the signal parameter is a total signal magnitude. (column 43, lines 13-32)

As per claim 35, Kent teaches the method of claim 33, wherein the signal parameter is a signal magnitude rate of change. (column 43, lines 13-32)

As per claim 36, Kent teaches the method of claim 33, wherein the signal parameter is a rate of change of position. (column 43, lines 13-32)

Claim 38 is rejected under 35 U.S.C. 102(e) as being anticipated by Nagao U.S. Patent 6,590,567.

As per claim 38, Nagao teaches a method for distinguishing phantom touch positions from valid touch positions during a double touch event in a touch screen system comprising: independently measuring an X-coordinate position for each touch in the double touch; (column 2, lines 21-50)

independently measuring a Y-coordinate position for each touch in the double touch;
(column 2, lines 21-50)

determining a rate of change of magnitude of a measured signal
corresponding to each X-coordinate position and each Y-coordinate position; (column 2,
lines 21-50)

matching X-coordinate positions with Y-coordinate positions based on similar rates of
change; (column 2, lines 21-50) and

reporting the matched X, Y coordinates as the valid touch positions. (column 2, lines 21-
50)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or
described as set forth in section 102 of this title, if the differences between the subject
matter sought to be patented and the prior art are such that the subject matter as a whole
would have been obvious at the time the invention was made to a person having ordinary
skill in the art to which said subject matter pertains. Patentability shall not be negated
by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kent U.S. Patent 6,723,929 in view of Kiser et al. U.S. Patent 6,738,049.

As per claim 9, Kent teaches the method of claim 1, however he fails to teach wherein different minimum and maximum threshold values can be assigned to different users.

Kiser et al. teaches user customizable touchscreen device. (Abstract)

It would have been obvious to an artisan at the time of the invention to include Kiser's teaching with method of Kent in order to provide user with a customizable interface.

Claims 23, 28, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kent U.S. Patent 6,723,929 in view of Adbehadi et al. U.S. Patent 6,819,313.

As per claim 23, Kent teaches the method of claim 22. However he fails to teach wherein the active area corresponds to a displayed icon.

Adbehadi et al. teaches icon being an active area. (figure. 2 item 49)

It would have been obvious to an artisan at the time of the invention to include Adbehadi's teaching with method of Kent in order to optimize the user interface for users who has limited mouse skill.

As per claim 28, it is of the same scope as claim 23. Supra.

As per claim 37, it is of the same scope as claim 23. Supra.

Conclusion

The following patents are cited to further show the state of the art with respect to a touch screen:

Bricklin et al. (US 5,539,427): discloses a graphic indexing system.

Eborhard et al. (US 6,639,577): discloses a portable information display device with ergonomic bezel

Contract Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peng Ke whose telephone number is (571) 272-4062. The examiner can normally be reached on M-Th and Alternate Fridays 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kristine L. Kincaid can be reached on (571) 272-4063. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Peng Ke

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